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A Business Model for Electronic Banking to Facilitate Mutual Collaboration with Financial Startups

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Abstract

With the advancement of technology and rapid changes in the financial industry, electronic banking has emerged as an innovative solution for providing financial services and facilitating financial interactions. This research examines and presents a business model for electronic banking aimed at improving mutual collaboration with financial startups. In this phase, after four rounds of refinement, out of 79 studies, 64 were eliminated, and 15 research papers were selected for data analysis. Following the review of the theoretical and empirical content, the coding of interviews was conducted at three levels: open, axial, and selective coding. During the open coding phase, approximately 266 concepts were identified as initial concepts from the interview texts, which were categorized into 63 subcategories and 6 main categories. Based on the results, the proposed business model includes key elements such as value proposition, cost structure, revenue sources, and distribution channels. This model helps banks leverage the innovations of startups to provide better services to customers, while startups can also benefit from the existing infrastructure of banks. Ultimately, the findings of this research can contribute to enhancing inter-organizational collaboration and increasing competitiveness in the financial market.

Keywords: Electronic Banking, Startup, Grounded Theory, Thematic Analysis

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1. Introduction

In today's world, the transformations in information and communication technology are rapidly changing all industries, especially in the financial and banking sectors. Electronic banking, as one of the most significant achievements of these transformations, has not only revolutionized traditional financial services but also created new opportunities for collaboration with financial startups. In this context, the mutual collaboration between the banking sector and financial startups has become one of the key and challenging issues. Given the increasing growth of financial startups and the need for innovation in banking services, banks face numerous challenges. These challenges include the inability to provide fast and efficient services, the need to improve customer experience, and competition with new players in the market. In this regard, collaboration with startups can help banks leverage new technologies and enhance their services. However, to realize this collaboration, there is a need for a clear and efficient business model that can meet the interests of both parties**.**

Research in the field of providing a business model for electronic banking to collaborate with financial startups is of great importance. This research can help banks formulate appropriate strategies for collaboration with startups and utilize their innovative capacities. Additionally, this research can enable startups to expand their services using the resources and infrastructure of banks and access new markets. Although there are patterns regarding banking and startups (Moradi et al., 2021; Soltani et al., 2021; Moradi et al., 2020; Morinda et al., 2022; Gabriel et al., 2019; Vers et al., 2019; Li and Shine, 2018; and Twits, 2016) and about electronic banking and financial startups (Asadollah et al., 2019), a comprehensive model has not yet been observed regarding the design of an electronic banking business model in financial startups. Furthermore, although the success of startups has drawn the attention of others to the concept of startups and many articles have been published on how to launch a successful startup (Yousefi et al., 2016; Khayatian et al., 2014; Behboudi Ganjeh and Abasi Khah, 2017; Hoffman, 2017; Huponen, 2018), less attention has been paid to the electronic banking business in startups. To date, limited research has focused on the transition from a startup to a profitable organization; thus, this research aims to design an electronic banking business model based on financial startups that can provide a scholarly and rational approach to navigating the transition process**.**

Despite numerous studies in the field of electronic banking and financial startups, there are still significant gaps in the existing literature. Many studies have examined the impact of new technologies on banking and financial services, but fewer have addressed specific business models that can facilitate mutual collaboration between banks and startups. This research gap indicates the need for further investigation into the design and implementation of business models that can effectively and efficiently facilitate collaboration between these two sectors. Therefore, this research aims to fill this gap and provide a comprehensive and efficient business model for electronic banking to promote mutual collaboration with financial startups**.**

2. Literature Review

2.1 Cooperation Theory for Organizations

Cooperation is a fundamental concept in the business world, defined as a process in which two or more firms collaborate for mutual long-term benefits (Rotering, 1993). This collaboration can take various forms, with alliances being one of the most prominent types. According to Gulati (1998), alliances are characterized by mutual arrangements between independent companies that seek to share and exchange resources, as they cannot often generate all necessary resources independently (Child, 1974; Salancik & Pfeffer, 1978).

Resource sharing in alliances can encompass a wide range of activities, including the co-development of products, services, and technologies. These alliances are typically formed with specific objectives in mind, and the terms are negotiated to ensure that all parties involved are committed to the implementation of the agreed-upon strategies (Dushnitsky, 2008). This structured approach to cooperation not only enhances resource efficiency but also fosters innovation and competitive advantage in the marketplace.

Cooperation is a key principle in the realm of business, described as a process where two or more firms work together to achieve mutual long-term advantages (Rotering, 1993). This collaboration can manifest in

various forms, with alliances being one of the most notable. As noted by Gulati (1998), alliances involve mutual agreements between independent companies that aim to share and exchange resources, as they frequently do not possess the ability to produce all necessary resources on their own (Child, 1974; Pfeffer & Salancik, 1978).

In alliances, resource sharing can include a broad spectrum of activities, such as the joint development of products, services, and technologies. These alliances are generally established with specific goals in mind, and the terms are negotiated to ensure that all parties involved are dedicated to executing the agreed strategies (Dushnitsky, 2008). This organized approach to cooperation not only improves resource efficiency but also promotes innovation and competitive advantages in the market.

In general, business partners must invest resources and engage in joint projects to establish business alliances. When successful, all partners involved share in the profits. This is particularly crucial for emerging companies, which often face constraints in financial resources and customer bases, necessitating collaboration with established firms that have access to these resources. Research conducted by Gans and Stern (2002) involving over 100 start-ups indicates that partnerships between a start-up and an established company (via licensing, alliances, or acquisitions) are favored when the established firm possesses resources that are vital for the start-up. Furthermore, Dushnitsky (2008) highlights the various resources that a start-up can gain by partnering with an established company that has a solid market history, including capital, infrastructure, industry knowledge, and the benefits of reputation (or endorsement effects). Thus, the collaborative process can lead to positive spillover effects for young companies (Stuart et al., 1999; Nozari et al., 2024).

Another prevalent form of collaboration is venture capital, which involves equity investments from various partners in a legally independent entity (Keil, 2000; Maula, 2001; Weber & Weber, 2007; Nozari & Szmelter-Jarosz, 2022). This type of partnership is crucial for supporting young companies that have high growth aspirations and face significant risks. Venture capital investments aim to achieve two primary objectives to enhance value: (i) obtaining high financial returns and (ii) pursuing diverse and complex innovation goals (such as gaining access to new products, insights into emerging technologies, or stimulating demand). Additionally, formal cooperation enables venture capital funds to offer non-financial assistance, including corporate infrastructure, networks, or other resources. Hellmann (2002) emphasizes that the success of a new venture can often hinge significantly on this non-financial support.

2.2 Conditions for Effective Collaboration

As noted by Nalebuff et al. (1996), the theory of cooperation serves as a strategic framework that enables organizations to categorize entities within a specific industry. This framework utilizes principles from game theory to analyze and elucidate the varying behaviors of economic agents. Nalebuff et al. (1996) contend that a dynamic of cooperation and competition is inherent and beneficial across all industries (Levinson & Asahi, 1995).

On one hand, when entities focus on expanding their market presence, they are compelled to collaborate to enhance the advantages for all involved (Hill & Lynn, 2003; Aliahmadi et al., 2016). Conversely, the competition among these entities aids in the allocation of the benefits derived from each participant based on their respective market shares. This theoretical model provides insights into how the interactions and decisions of players result in diverse outcomes or the final state of the game. Furthermore, this theory assists managers and researchers in recognizing and elucidating the internal mechanisms within the corporate landscape, as well as how companies can manipulate these mechanisms to advance their interests.

2.3 Collaboration Between Banks and Fintech

Fintech, short for financial technology, refers to organizations that integrate innovative business models and technologies to improve the efficiency of financial services while simultaneously challenging and transforming traditional banking models. According to Ernst & Young (EY), Fintech has emerged as a sector that has fundamentally changed the landscape of financial technology and banking. The Basel Committee on Banking Supervision has adopted the definition provided by the Financial Stability Board (FSB), which describes Fintech as innovations in financial technology that facilitate the creation of new business models, applications, processes, or products capable of significantly impacting markets, financial institutions, and the operations of financial services.

Given this expansive definition, Fintech encompasses technological advancements implemented by a diverse array of stakeholders, including new market entrants, established banks with extensive operational histories, small fintech startups, and large technology firms. This broad understanding is beneficial for researching and analyzing the dynamics of cooperation and competition between Fintech firms and banks (Navaretti et al., 2018). Overall, Fintech has instigated a revolution in financial technology, leading to significant enhancements in banking services through the introduction of innovative financial solutions and digital application models within the financial services sector (Puschmann, 2017). This evolution has helped optimize the cost structure of the financial industry to better serve consumer needs.

Recognizing the advantages that Fintech offers, banks have increasingly viewed investments in Fintech companies as a strategy to lower costs, boost efficiency, and enhance service quality. Douglas, JL, and Grinberg, R. (2016) highlighted several criteria that banks consider when investing in Fintech, including (i) the legality of operations, (ii) the capacity for oversight and management, (iii) the bank's ability to exert control over the Fintech company's operations and business practices, (iv) the perspectives of potential investors and their investment frameworks, and (v) the complexity and duration of obtaining regulatory approval.

Chuen (2015) identifies five key factors that influence the success of Fintech ventures: low margin requirements, minimal asset levels, high scalability, significant innovation, and a less complex compliance process. Additionally, Haddad and Hornuf (2016) investigated the economic and technological aspects of Fintech across 69 countries. Their findings indicate that Fintech tends to flourish in markets where advanced technology is accessible, as emerging companies rely on these technologies for their offerings. The study also reveals that Fintech is more likely to be established and thrive in nations with weak and unstable financial markets.

Recent studies have examined the dynamics between banks and fintech companies. Jakšič & Marinc (2015) highlight that fintech and other technology firms are poised to bring significant transformations to financial markets through their innovative offerings. In a similar vein, Lacasse et al. (2016) forecast that emerging services will align well with market demands and frequently provide products that surpass those of traditional sectors. Keith Tiberius and Rasche (2017) demonstrate the disruptive potential of fintech through a case study that underscores the benefits of new services across various product categories. Consequently, PWC (2016) reported that over 80 percent of respondents (experts from established financial institutions) perceive their businesses as vulnerable to disruption from fintech. Bunea et al. (2016) analyzed annual records from the US Securities and Exchange Commission (SEC) and found indications that banks regard fintech as a significant threat.

Conversely, other research has concentrated on the benefits of collaboration between fintech firms and established banks (Kalmykova, 2016; Burgmaier & Hüthing, 2015; Lotfi et al., 1016), exploring various collaboration strategies (Thwaits, 2016; Meinert, 2017). Numerous studies suggest that partnerships between financial institutions and fintech are viewed as a fresh opportunity for traditional banks to tap into external innovations (BNY Mellon, 2015; Deutsche Bank Research, 2016). Specifically, Corea (2015) posited that the role of venture capital funds has grown in importance for banks. Bomer and Maxin (2018) conducted a case study on Commerzbank's business incubator, which is recognized as Germany's first corporate venture capital initiative for fintechs. Their findings indicated that regulatory frameworks significantly influence the selection and support processes for seven fintech companies. Additionally, Bodek and Matinjan (2017) performed a case study on the Comdirect startup project, focusing on the bank's screening, support, and innovation objectives.

Thus, the primary motivations for fintech firms to partner with banks are to facilitate market entry and enhance profitability. Whenever a fintech seeks collaboration with a bank to penetrate a market, it typically has an additional aim: either to boost profits or to innovate new products. Furthermore, research indicates that fintechs in the banking sector often aim to collaborate with established banks to leverage their customer base, branch networks, capital, and reputation to increase profitability. Meanwhile, by partnering with fintech, banks can not only bolster their competitive edge through more advanced financial services but may also secure exclusive rights to utilize specific applications or licenses, enabling them to outpace

competitors (Hornuf et al., 2020). The collaboration process between fintech and banks is illustrated in the following chart.

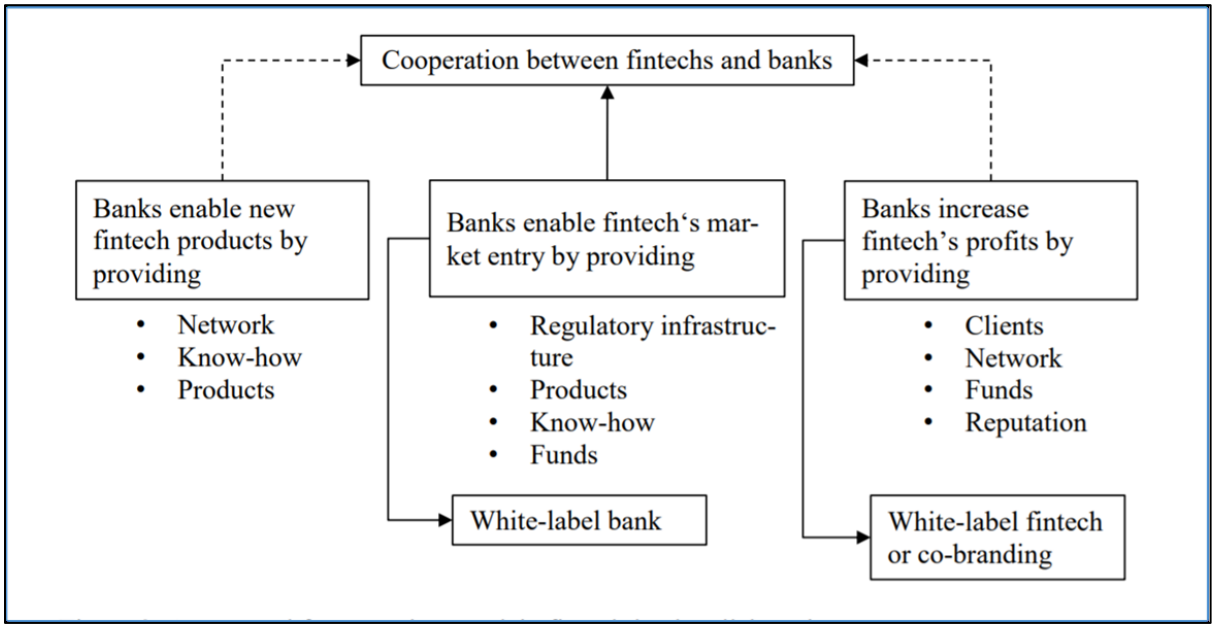

Figure 1. The Collaboration Process Between Fintech and Banks (Bömer, 2020;)

The preceding analysis outlines the motivations behind the collaborative process, while cooperation theory provides a framework for understanding the underlying reasons for these motivations. This study utilizes cooperation theory to explore the challenges associated with integrating fintech into the banking system in Vietnam, as well as to assess the benefits and drawbacks of the collaboration process, the criteria for partner selection, and the potential outcomes of products developed through the partnership of these two entities**.**

3. Methodology

This research employs a qualitative approach to assess the business model of electronic banking to foster cooperation with financial startups. In this context, the research model is presented through two methods: qualitative content analysis of previous studies and interviews with experts in the field. To achieve the results, the following steps were taken:

A. In the first stage, a comprehensive review of the literature on the subject and the background of the research was conducted, resulting in a thorough understanding of the categories and topics related to the research. Various books, articles, and studies were analyzed and utilized. Ultimately, this research was carried out through an extensive study and review of books, articles, the internet, and more than 79 studies in the area of electronic business models. The concepts related to the process, definitions, structures, outcomes, achievements, and necessary actions associated with business models served as the basis for selecting library resources.

B. In the second section, a preliminary conceptual model was presented using insights from a selected group of research experts (11 experts based on theoretical saturation) who specialize in business models. The characteristics of the experts in this research are as follows: The age distribution of the expert sample is detailed below:

Table 1. Age of Research Experts

Percentage	Frequency	Age Range
36	4	35 to 45 years
45	5	46 to 55 years

19	2	56 and above
100	11	Total

Work Experience of Research Experts:

Table 2. Work Experience of Experts

Percentage	Frequency	Work Experience
45	5	5 to 10 years
36	4	10 to 20 years
19	2	21 years and above
100	11	Total

Educational Background of Research Experts:

Table 3. Education of Experts

Percentage	Frequency	Education Level
10	1	Bachelor
45	5	Master
45	5	Doctorate and above
100	11	Total

4. Findings

1.4. Thematic Analysis

Based on the aforementioned points, the primary and secondary categories presented in the empirical background of the research have been extracted and are listed in Table 4.

Table 4. Main and Sub-components of the Model for Mutual Collaboration between Electronic Banking and Financial Startups in Previous Studies

ProposedComponents	Source	Row
Non-current claims, return on assets, dividend return	Moliati & Supreyaman (2024)	**1**
Trusted advisor, preferred bank, availability of specialized services and products, digitalization, ecosystem	Mir et al(2024)	**2**
Profit sharing, lending of balance sheet assets, asset and wealth management, payments, transfers, forex, cryptocurrencies	Lubuzinska et al(2023)	**3**
Increasing fintech profitability by banks, new products and services by fintech	Huang et al(2021)	**4**
Website design, website quality and website space, outcomes resulting from an optimal website	Kawaf et al(2017)	**5**
Environmental changes, life cycle, social changes, stakeholders, economic value, environmental value, social value, communications, partners, activities, value, customer communications, distribution channels, customer segmentation, resources, revenue, costs, functional values, materials, products, suppliers, outsourcing, profits and environmental impacts, consumption stage, product end-of-life, employees, governments, social culture, social profit, social impacts	Joyce & Pagwyn (2016)	**6**

Company-centric business model, network business model, interaction, communication, information technology, existing partners, new partners, new methods	Bankwal et al (2016)	**7**
Market, technology, change, infrastructure components, linear or simple product innovations, design, creating a value network for customers, less risk for partners, resources, suppliers, competitive advantage, better product and service, patience in times of uncertainty, limitations of business model development	Rajala(2016)	**8**
Website design, website quality and website space, outcomes resulting from an optimal website	Kawaf et al(2017)	**9**
Innovative capabilities, entrepreneurial mindset, supply chain initiatives, market structure of the banking industry, technological activities	Mashhadi Abdol & colleagues (2023)	**10**
Identifying technological needs, updating, research and development, negotiation, transferring technical knowledge, acquiring operational knowledge, implementing technical knowledge, providing transfer plans and securing infrastructure.	Bid and colleagues (2023)	**11**
Cultural contexts, the interaction of banks with other industry actors, and the regulator's interaction with banks.	Arsjani and colleagues (2021)	**12**
Digital design, the quality of customer communication, and customer commitment.	Moslehi (2020)	**13**
The structure of financial institutions, customer segmentation, fintech developers, and the business environment.	Asadollah and colleagues (2019)	**14**
Products/services, target customers, distribution channels, customer loyalty, insurance, resources and competencies, collaboration networks or partners, cost structure, revenue structure, and electronic intermediaries.	Rezvani and Eslahi (2016)	**15**
Weaknesses of traditional banking models, familiarity with new technologies, acceptance of electronic banking, model selection, virtual banking, online self-service, and improving future performance.	Rezvani and Eslahi (2014)	**15**

Source: Current Research

At this stage, the text of each interview has been read, and a code has been assigned to each key point. Before presenting the results obtained from the coding stages in the grounded theory method, the demographic characteristics of the group of research experts are addressed as follows:

4.2. Interview with Experts

In the following section, the coding of the interview texts has been undertaken. To code the interview texts, the interview was carefully read, and important concepts and patterns were identified. The following steps can then be taken:

1. Preparation of a Coding System: In this step, the MAXQDA software was utilized for coding.
2. Definition and Explanation of Coding Units: Important concepts, patterns, and themes in the text were defined, and they were assigned a name or code number.
3. Selection and Alignment of Categories: At this stage, the main components were selected based on the content and meaning of the text and were coded accordingly.
4. Execution of Coding: The interview text was carefully reviewed and coded based on the defined patterns and codes.
5. Review and Analysis of Codes: Following the coding process, an analysis of the codes was conducted, identifying existing patterns and affiliations.

6. Reporting Results: Finally, the results of the coding were reported, and the analyses conducted were explained in detail.

In this section, some of the key topics discussed in the interviews and the components attributed to them are presented:

Grounded theory coding is a qualitative research method that helps researchers extract theories from empirical data. This method is particularly applicable in social sciences and human research. The coding stages in grounded theory are described as follows:

4.2.1. Open Coding

In this stage, the researcher collects information through interviews, observations, texts, and any related data. The data should be rich and deep enough to allow the researcher to gain a comprehensive understanding of the subject. In open coding, the researcher identifies and labels various concepts and features within the data. This stage involves breaking down the data into smaller segments and identifying key patterns and concepts. The researcher must assign a code to each concept that represents its characteristic features. In this study, a total of eleven interviews were conducted. The criterion for the adequacy of the number of interviewees was theoretical saturation, meaning that by the tenth participant, no new concepts emerged. However, to ensure greater confidence, an additional interview was conducted. Based on this, the number of concepts recorded in the interviews conducted is presented in the table below:

Table 5. Identified Codes Based on Interviews

Document name	Coded Segments
Interview Eleven	28
Interview One	17
Interview Five	33
Interview Four	30
Interview Ten	25
Interview Two	35
Interview Three	8
Interview Six	17
Interview Nine	43
Interview Eight	14
Interview Seven	16

Source: MAXQDA Output

Based on the conducted interviews and the issues raised, the following concepts have been identified for the electronic banking business model in order to facilitate mutual collaboration with identified financial startups. These concepts are presented in Table 6 based on the interviews:

Table 6. Concepts and codes raised in the interview with the group of research experts

	Interview Eleven	Interview One	Interview Five	Interview Eight	Interview Seven	Interview Three	Interview Nine	Interview Six	Interview Four	Interview Two	Interview Ten	Total
Mutual Cooperation between Banks and Financial Startups	0	1	0	0	0	0	0	0	0	0	0	1
Consequences	0	1	0	0	0	0	0	0	0	0	0	1
System Transparency	0	0	0	0	0	0	1	0	0	0	0	1
Effective Management	0	0	0	0	0	0	1	0	0	0	0	1
Increased Productivity	0	0	0	0	0	0	1	0	0	0	0	1

Creation of a Collaborative Ecosystem	0	0	0	0	0	1	0	0	0	0	0	1
Improved Services and Security	0	0	0	0	0	1	0	0	0	1	0	2
Access to Modern Technologies	0	0	0	0	0	1	1	0	0	1	0	3
New Market Opportunities	0	0	0	0	0	0	0	0	0	0	1	1
Increased Credibilit	0	0	0	0	0	0	0	0	0	0	1	1
Access to Financial and Technological Resources	0	0	0	0	0	0	1	0	0	0	1	2
Cost Reduction	0	0	0	0	0	0	0	0	0	0	1	1
Improved Customer Experience	0	0	0	0	0	0	0	0	0	0	1	1
Development of Financial Technologies	0	0	1	0	0	0	0	0	0	0	0	1
Service Diversification	0	0	1	0	0	0	0	0	0	0	0	1
Agility	0	0	1	0	0	0	0	0	0	0	0	1
Expansion of Research and Development Areas	0	1	0	0	0	0	1	0	0	0	0	2
Joint Investment	0	1	0	0	0	0	1	0	0	0	0	2
Newer and Faster Services	0	1	0	0	0	0	0	0	0	0	1	2
Increased Creativity and Innovation	0	1	0	0	0	0	1	0	0	0	1	3
Establishing a Common Understanding of Goals and Needs	0	1	0	0	0	0	0	0	0	0	0	1
Strategies	0	1	0	0	0	0	0	0	0	0	1	2
Attention to Regulations and Security	1	0	0	0	0	0	0	0	0	0	0	1
Data Analysis and Customer Orientation	1	0	0	0	0	0	0	0	0	0	0	1
Development of a Culture of Cooperation	1	0	0	0	0	0	0	0	0	0	0	1
Expansion of Research and Development	1	0	0	0	0	0	0	0	0	0	0	1
Investment in Modern Technologies	1	0	0	0	0	0	0	0	0	0	0	1
Utilization of New Business Models	1	0	0	0	0	0	0	0	0	0	0	1
Creation of Financial Accelerators	1	0	0	0	0	0	0	0	0	0	0	1
Development of Technological Partnerships	1	0	0	0	0	0	0	0	0	0	0	1
Focus on Training and Empowering Employees	0	0	0	1	0	0	0	0	0	1	1	3
Joint Investment	0	0	0	0	0	0	0	0	0	0	1	1
Establishing Regular and Transparent Communications	0	0	0	0	0	0	0	0	0	0	1	1
Creating Joint Innovation Programs	1	0	0	0	0	0	0	0	0	0	1	2
Organizing Workshops and Educational Events	1	1	0	0	0	0	0	0	0	0	0	2
Intervening Factors	0	1	0	0	1	0	0	0	0	0	0	2
Government Policies	0	0	0	0	1	0	0	0	0	1	0	2
Internal Processes of Banks and Startups	0	0	0	1	1	0	0	0	0	0	1	3
Competitors	0	0	0	0	0	0	0	0	0	0	1	1
Competitors	0	0	0	0	1	0	0	0	0	0	1	2
Contextual Factors	0	1	0	0	0	0	0	0	1	0	0	2
Transformation and Organizational Changes	0	0	0	0	0	0	0	1	0	0	0	1

Accurate Understanding of Cultural Context	0	0	0	0	0	0	0	0	0	0	1	1
Accurate Understanding of Economic Context	0	0	0	0	0	0	0	0	0	1	1	2
Accurate Understanding of Social Context	0	0	0	0	0	0	0	0	0	0	1	1
Presence of Big Data and Cloud Technologies	0	0	0	0	0	0	0	0	0	0	1	1
Technological Infrastructure	0	0	0	0	0	0	0	0	0	0	1	1
Market Conditions and Competition	0	0	0	0	0	0	0	0	0	0	1	1
Specialized Human Resources	0	0	0	0	0	0	0	0	1	0	0	1
Laws and Regulations	0	1	0	0	0	1	0	1	0	1	0	4
Causal Factors	0	1	0	0	0	0	0	0	0	0	0	1
Customer-Related Factors	0	0	0	0	0	0	0	0	0	1	0	1
Leadership and Strategy	0	0	0	0	0	0	0	0	0	1	0	1
Increased Knowledge and Skills Necessary for Collaboration	0	0	0	0	0	0	0	0	0	1	0	1
Culture of Innovation	0	0	0	0	0	0	0	0	0	1	0	1
IT Infrastructure	0	0	0	0	0	0	0	0	0	1	0	1
Employing Digital Leadership	0	0	0	0	0	0	0	0	1	0	0	1
Structuring	0	0	0	0	0	0	0	0	1	0	0	1
Understanding Models and Structures Based on Intelligent Business Practices	0	0	0	0	0	0	0	0	1	0	0	1
Technology Acceptance	0	0	0	0	0	0	0	0	1	0	0	1
Technological Equipment	0	0	0	0	0	0	0	0	1	1	0	2
Security Management	0	0	1	0	0	0	0	0	0	0	0	1
Transparency in the Banking System	0	0	1	0	0	0	0	0	0	0	0	1
Technological Governance	0	0	1	0	0	0	0	0	0	0	0	1
System Coordination	0	0	1	0	0	0	0	0	0	0	0	1
Competition	0	1	0	0	0	0	0	0	0	1	0	2
Information Security	0	1	0	1	0	0	0	0	0	0	0	2
Organizational Culture	0	1	1	0	0	0	0	1	0	1	1	5
Technology	0	1	1	0	0	0	0	0	0	0	0	2
SUM	10	17	9	3	4	4	8	3	7	14	22	101
N = Documents	1	1	1	1	1	1	1	1	1	1	1	11

Source: Research Calculations (MAXQDA Output)

4.2.2. Axial Coding

The core category is a central idea or concept, an event, occurrence, or phenomenon that directs the flow of actions and reactions toward it, in order to manage, control, or respond to it. The core category is associated with the main question: What do the data indicate? It represents an idea, image, perception, or phenomenon that serves as the foundation and core of the process. This category is essentially the title, name, or conceptual label created for the framework or design under consideration. In this study, the core category has been identified as follows:

Table 7. Identified Concepts in the Research

Main Category	Sub-category	Concepts
Core Category	Mutual collaboration of banks with financial startups	Combining the technical innovations of startups with the strong infrastructure of banks to provide better and more efficient financial services to customers

	Combining new technologies with banking infrastructure to create innovative financial services and enhance customer experience

Table 8. Main Categories Related to the Core Category

	Documents	Percentage	Percentage (valid)
Causal Factors	7	63.64	63.64
Contextual Factors	6	54.55	54.55
Consequences	6	54.55	54.55
Strategies	5	45.45	45.45
Intervening Factors	5	45.45	45.45
DOCUMENTS with code(s)	11	100.00	100.00
DOCUMENTS without code(s)	0	0.00	-
ANALYZED DOCUMENTS	11	100.00	-

Causal conditions are the events and occurrences that lead to the emergence or expansion of the phenomenon in question.

Table 9. Causal Conditions of the Research

	Segments	Percentage
Organizational Culture	11	13.41
Information Security	7	8.54
Technological Equipment	7	8.54
Technology Acceptance	6	7.32
Competition	6	7.32
System Coordination	5	6.10
Structuring	5	6.10
Security Management	4	4.88
Banking System Transparency	4	4.88
Technological Governance	4	4.88
Leadership and Strategy	4	4.88
Understanding the Business Intelligence-Based Model and Structure	4	4.88
IT Infrastructures	4	4.88
Implementation of Digital Leadership	4	4.88
Customer-Related Factors	3	3.66
Technology	2	2.44

Increasing Knowledge and Skills Necessary for Collaboration	1	1.22
Innovation Culture	1	1.22
TOTAL	82	100.00

Contextual conditions refer to the specific circumstances that influence the strategy. These conditions represent a set of unique factors in which the strategies of action and reaction take place.

Table 10. Contextual Conditions of the Research

Contextual	Segments	Percentage
Laws and Regulations	9	31.03
Organizational Transformation and Changes	7	24.14
Specialized Human Resources	4	13.79
Accurate Understanding of Economic Context	4	13.79
Existence of Big Data and Cloud Technologies	1	3.45
Technological Infrastructures	1	3.45
Market Conditions and Competition	1	3.45
Accurate Understanding of Cultural Context	1	3.45
Accurate Understanding of Social Context	1	3.45
TOTAL	29	100.00

Intervening conditions are structural conditions that pertain to the phenomenon in question and affect the strategies of action and reaction. They either constrain or facilitate the strategies within a specific context.

Table 11. Research Intervening Conditions

Intervening Condition	Segments	Percentage
Internal Processes of Banks and Startups	10	38.46
Government Policies	9	34.62
Regulatory Bodies	6	23.08
Competitors	1	3.85
TOTAL	26	100.00

Strategies are specific actions or interactions that arise from the main phenomenon. They are based on actions and reactions aimed at controlling, managing, and addressing the phenomenon in question. Strategies are purposeful, goal-oriented, and executed for specific reasons. At the same time, they may also serve objectives that are not directly related to the phenomenon; however, they will nonetheless have implications for the phenomenon.

Table 12. Research Strategies

Strategies	Segments	Percentage

Focus on Employee Training and Empowermen	7	17.95
Data Analysis and Customer Orientation	6	15.38
Attention to Regulations and Security	5	12.82
Adoption of New Business Models	4	10.26
Development of a Collaborative Culture	4	10.26
Expansion of Research and Development	2	5.13
Establishment of Financial Accelerators	2	5.13
Investment in New Technologies	2	5.13
Creation of Joint Innovation Programs	2	5.13
Hosting Workshops and Educational Events	2	5.13
Establishing Regular and Transparent Communications	1	2.56
Development of Technological Cooperation	1	2.56
Joint Investment	1	2.56
TOTAL	39	100.00

Outcomes refer to the results that emerge as a consequence of the strategies implemented. They are the products of actions and reactions. Outcomes cannot always be predicted and are not necessarily the same as those intended by individuals. They may manifest as events or occurrences, can take on a negative form, and may be either explicit or implicit. Outcomes can occur in the present or the future and have the potential to transition from being considered an outcome at one point in time to becoming part of the contextual conditions or factors at another time.

Table 13. Research Outcomes

Categories	Segments	Percentage
Access to New Technologies	16	19.75
Effective Management	9	11.11
Access to Financial and Technological Resources	8	9.88
Expansion of Research and Development Areas	7	8.64
Increased Productivity	6	7.41
Development of Financial Technologies	5	6.17
Increased Creativity and Innovation	5	6.17
Agility	4	4.94
System Transparency	4	4.94
Diversity of Services	4	4.94
Improvement of Services and Security	2	2.47
Joint Investment	2	2.47
Newer and Faster Services	2	2.47
Creation of a Collaborative Ecosystem	2	2.47
Improved Customer Experience	1	1.23
Increased Credibility	1	1.23
New Market Opportunities	1	1.23
Cost Reduction	1	1.23

Creation of a Shared Understanding of Goals and Needs	1	1.23
TOTAL	81	100.00

4.2.3. Selective Coding

In open and axial coding, the electronic banking business model was developed for mutual collaboration with financial startups, a pattern that includes causal conditions, contextual conditions, intervening conditions, implementation of policies, strategies, and policy evaluation. Selective coding utilizes the results of the previous coding steps, selects the central category, and systematically relates it to other categories, thereby validating the relationships and developing categories that require refinement and further development (Strauss & Corbin, 1990). Selective coding starts based on the identified relationship pattern between categories and subcategories in open and axial coding. The steps of selective coding are as follows:

- Determining the storyline: The storyline is the conceptualization of the narrative concerning the study. To facilitate the determination of the storyline, the data are revisited not only through back-and-forth movements between categories and subcategories but also between open, axial, and selective coding.
- Linking subcategories to the central category through a paradigm: Subcategories are linked to the central category using the paradigm. In order to adequately align categories and subcategories with the storyline, we return to the narrative to reorganize the categories so that they better form the elements of the paradigm model. Subsequently, the processes of problem identification and causal conditions (antecedent conditions), contextual conditions, intervening conditions, policy implementation, strategies, actions, policy evaluation, and model outcomes should be articulated.
- Validating relationships: To validate the relationships between the categories organized in the paradigm model, a thorough examination of the data, notes, codes, and contextual memos is necessary. After comparing the final design, assurance must be obtained that this theoretical design can explain a larger number of observed cases.
- Filling gaps between categories: In the theory derived from data, it is necessary to achieve conceptual density and coherence, adding as many conceptual characteristics as possible (Strauss & Corbin, 1990).

It should be noted that the above steps occur in a back-and-forth process; thus, the steps of selective coding are not clearly distinct from one another and are conducted through an interactive process accompanied by open and axial coding. In summary, the data analysis procedure that leads to the formulation of the theoretical model includes problem identification and causal conditions, contextual conditions, intervening conditions, policy implementation, strategies and actions, outcomes, and policy evaluations, all of which clarify the core phenomenon, namely, the development of the electronic banking business model for mutual collaboration with financial startups.

After preparing the paradigm model to enhance model validity, the paradigm model was presented to experts familiar with both electronic banking systems and grounded theory methodology. These experts were asked to provide their feedback on the model development process and the final model; most of them approved the model, while some offered corrective suggestions, which were incorporated in an iterative process, and their final feedback was collected. Figure 4-1 shows the final research model in the qualitative section.

Therefore, based on the narrative expression of the components obtained during the axial and selective coding paradigms, the relationships among them can be articulated in the form of the following propositions. It should be noted that all variables included in the model have been derived based on the experts' opinions, and the model has been developed impartially.

1) Among the causal factors influencing the business model of electronic banking for mutually collaborating with financial startups, we can refer to organizational culture, information security, technological equipment, technology acceptance, competition, system coordination, structuring, security management, banking system transparency, technological governance, leadership and strategy, understanding models and structures based on business intelligence, IT infrastructure, employing digital

leadership, customer-related factors, technology, increasing the necessary knowledge and skills in collaboration, and the culture of innovation.
2) Additionally, laws and regulations, organizational transformation and changes, specialized human resources, a proper understanding of the economic context, the presence of big data and cloud technologies, technological infrastructure, market and competition conditions, a proper understanding of the cultural context, and a proper understanding of the social context provide a specific environment for implementing strategies, which include focusing on employee training and empowerment, data analysis and customer orientation, attention to regulations and security, using new business models, developing a culture of collaboration, expanding research and development, creating financial accelerators, investing in new technologies, establishing joint innovation programs, holding workshops and educational events, maintaining regular and transparent communications, and developing technological cooperation and joint investment.
3) The internal processes of banks and startups, government policies, regulatory bodies, and competitors can also be considered as a general platform for executing actions and interactions.
4) Ultimately, the mutual collaboration of electronic banking with financial startups is influenced by causal conditions, contextual conditions, intervening conditions, and actions and interactions, resulting in outcomes that include access to new technologies, effective management, access to financial and technological resources, expanding research and development fields, increasing productivity, developing financial technologies, enhancing creativity and innovation, agility, system transparency, diversity of services, improvement of services and security, joint investments, newer and faster services, creating a collaboration ecosystem, enhancing customer experience, increasing credibility, new market opportunities, reducing costs, and creating a shared understanding of goals and needs.

4.2.4. Theorizing

Considering the main and secondary dimensions and components identified in the model, the theoretical model of the research can be presented as follows:

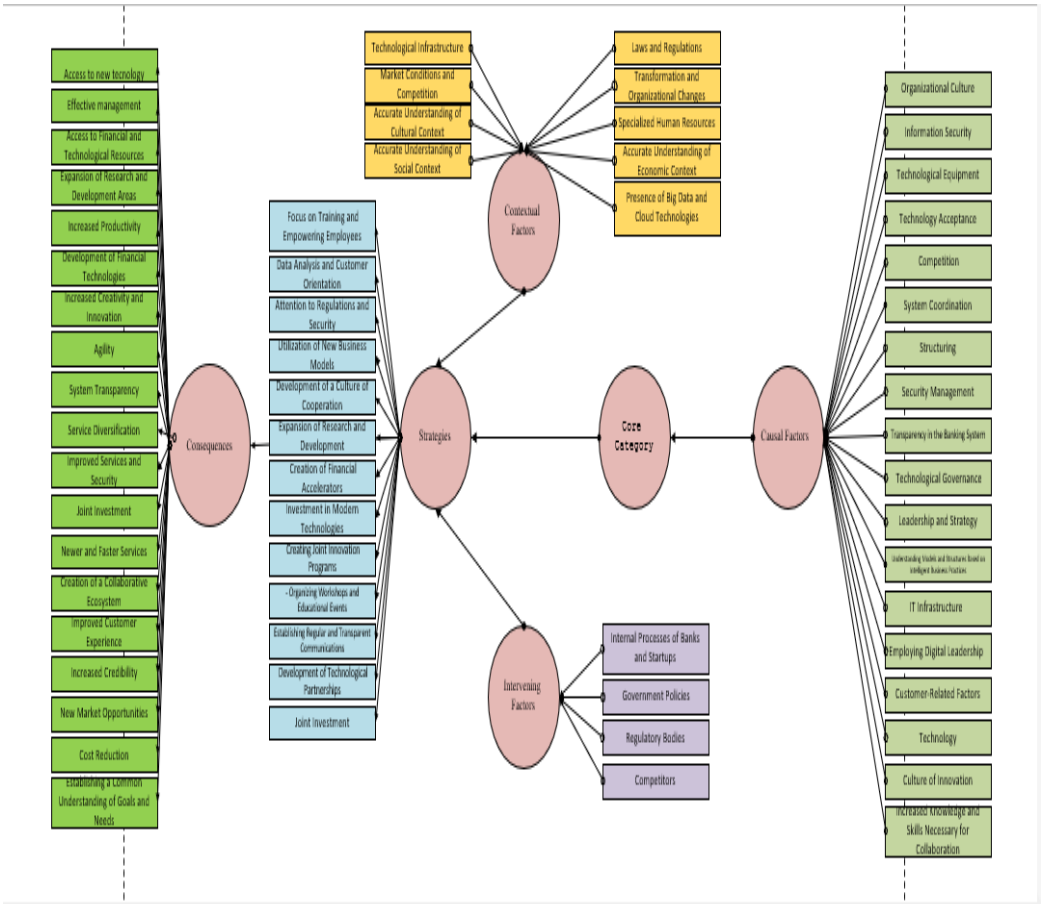

Figure 2. Research conceptual model

Based on the results of the research, the mutual collaboration between electronic banking and financial startups has the following implications, which are explained below:

1. Access to New Technologies: Banks can gain access to the latest technologies and innovative tools through collaboration with startups.
2. Effective Management: Improvement of managerial and operational processes through the adoption of innovative experiences and methods from startups.
3. Access to Financial and Technological Resources: Collaboration with startups can help banks acquire new financial and technological resources.
4. Expansion of Research and Development Areas: Creating opportunities for new research and the development of financial technologies through the exchange of ideas and experiences.
5. Increased Productivity: Improving efficiency and reducing processing time by utilizing new technologies.6. Development of Financial Technologies: Accelerating the innovation process and discovering new opportunities in the financial and technology sectors.
6. Development of Financial Technologies: Accelerating the innovation process and discovering new opportunities in the financial and technology sectors.
7. Increase in Creativity and Innovation: The combination of ideas and resources can lead to the creation of new products and services.
8. Agility: The ability to respond quickly to market changes and customer needs by utilizing the efficient approaches of startups.
9. System Transparency: Improvement of transparency in processes and services offered to customers.
10. Service Diversification: Expanding the range of financial services through the integration of new products and services can lead to increased customer choices.

11. Enhanced Services and Security: Improvement in service quality and ensuring the security of customer information through protective innovations.
12. Joint Investment: The possibility of creating financial partnerships and joint investments for the development of new technologies.
13. Newer and Faster Services: The emergence of innovative financial services that are rapidly delivered to customers.
14. Creation of a Collaborative Ecosystem: Formation of a network of collaboration between banks and startups that facilitates innovation.
15. Improved Customer Experience: Enhancement of customer experience through the provision of personalized and efficient services.
16. Increased Credibility: Strengthening the credibility and brand value of banks through collaboration with innovative startups.
17. New Market Opportunities: Identifying and entering new markets, as well as attracting more customers.
18. Cost Reduction: Improving efficiency and reducing costs by utilizing new technologies and efficient processes.
19. Creation of a Shared Understanding of Goals and Needs: Strengthening communications and synergy between banks and startups for better understanding of each other's goals and needs.
These implications not only benefit banks and startups but ultimately serve the interests of customers and the broader economy.

5. Conclusion

This research has aimed to present a model for the mutual collaboration between electronic banking and financial startups, as the increasing advancements in technology have made the examination of these topics highly significant. Despite the valuable insights provided in previous studies, there remains a significant research gap in the literature of this field. For instance, while the impact of technology and managerial factors on comprehensive banking systems has been established, further research is needed to explore how these factors specifically affect the dynamics of collaboration between electronic banks and financial startups.
Additionally, empirical studies that assess the effectiveness of various collaborative models between electronic banks and startups in different regulatory environments can provide valuable insights. Research can also investigate the long-term sustainability of such collaborations, particularly in the context of rapidly evolving technology. Therefore, the existence of previous studies in this area does not diminish the importance of conducting broader investigations. The emergence of financial technologies and the increasing number of startups in the financial sector have brought about significant transformations in the landscape of traditional banking. Understanding how electronic banking models can effectively collaborate with these startups is vital for enhancing innovation, improving customer services, and boosting operational efficiency. Considering the above points, the results of this research demonstrate that important indicators elucidate the business models of electronic banking. The findings highlight the significance of the structure of financial institutions, customer segmentation, technology developers, and the business environment as core elements of this mutual collaboration. These components not only define the operational framework of electronic banking but also shape the strategies for collaboration with startups.
The ecosystem model identified in this research for mutual collaboration with startups includes the key elements necessary for the growth of innovative businesses. This model emphasizes the role of an integrated approach in enhancing the sustainability of electronic banking collaborations.
On the other hand, the Fourth Industrial Revolution has significantly impacted the development of digital banking. The findings of this study indicate that the engagement of new players with the banking service supply chain, the strengthening of inter-organizational collaborations, and investments in banking IT infrastructure are important drivers of these transformations. The integration of advanced technologies necessitates an adaptive business model that can accommodate changes in customer behavior and technological advancements. From another perspective, the designed model reveals a significant relationship between the components of customer engagement, financial management, and value creation

within electronic banking business models. This finding underscores the necessity for electronic banking to adopt a customer-centric approach, positioning startups as valuable partners in enhancing customer experiences and addressing unique financial needs.

Based on the research model, strategies for implementing a flexible regulatory governance model are recommended, emphasizing the need for a revision of regulations and strengthening banking supervision led by banking authorities. This governance framework is essential to ensure that the collaborations between electronic banks and financial startups comply with regulatory standards while simultaneously promoting innovation.

Furthermore, the reciprocal impact of economic growth and the reduction of corruption highlights the necessity for reforming administrative-structural systems and related regulations. Such reforms could create a favorable environment for the flourishing of startups and collaboration with established banks, fostering a dynamic and innovative financial ecosystem.

In summary, it can be said that the integration of electronic banking with financial startups presents a unique opportunity for innovation and enhanced service delivery in the banking sector. By focusing on the critical components identified in the literature, strengthening collaboration through effective governance, and addressing existing knowledge gaps, the banking industry can position itself better to navigate the challenges and opportunities of the digital age. Therefore, future research should aim to deepen the understanding of these collaborative mechanisms and their implications for the broader financial ecosystem.

Based on the research findings, several strategies for the electronic banking business model have been identified to facilitate mutual collaboration with financial startups, which, if implemented, can yield positive outcomes. These strategies are detailed in the research questions section. However, this section provides some general practical recommendations:

A. Recommendations for Electronic Banking:

- Banks can create joint digital platforms in collaboration with startups that offer various financial services on a single platform. These platforms may include services such as credit scoring, payment processing, and financial advisory.
- Providing open and standardized APIs to startups enables them to easily access data and services of banks and develop innovative software.
- Banks can assist startups in analyzing customer behavior patterns using big data, allowing them to offer more personalized services.
- Banks can launch accelerators for fintech startups, providing them with the necessary resources and consulting to help develop innovative ideas.
- Banks can collaborate with startups to develop new revenue models such as subscription income, advertising, and partnerships in financial services.
- Banks should organize training programs for startups and their innovation teams to familiarize them with processes, regulations, and operations in the financial sector.

B. Suggestions for financial startups:

- Startups can develop complementary services and tools that can be integrated into banking platforms, providing added value to customers.
- Startups can help banks by creating innovative solutions such as digital wallets, investment management tools, and new payment solutions.
- Startups can collaborate with banks on joint research and development projects, sharing their experiences in financial innovations.
- Startups can identify customer needs and desires using data analytics techniques and offer new services centered around those insights.
- Startups can leverage blockchain technology to create services such as fast and secure payments or smart contracts, thereby adding value.
- Startups should carefully familiarize themselves with the standards and regulatory requirements in the financial industry and design their models to align with these requirements.

These suggestions can lay the groundwork for effective collaborations between the electronic banking sector and financial startups, which in turn can contribute to innovation, increased competitiveness, and improved customer services.

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